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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

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**Form 8-K**

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**CURRENT REPORT  
Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): December 21, 2020**

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**WAVE LIFE SCIENCES LTD.**

(Exact name of registrant as specified in its charter)

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**Singapore**  
(State or other jurisdiction  
of incorporation)

**001-37627**  
(Commission  
File Number)

**Not applicable**  
(IRS Employer  
Identification No.)

**7 Straits View #12-00, Marina One  
East Tower  
Singapore**  
(Address of principal executive offices)

**018936**  
(Zip Code)

**Registrant's telephone number, including area code: +65 6236 3388**

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol	Name of each exchange on which registered
<b>\$0 Par Value Ordinary Shares</b>	<b>WVE</b>	<b>The Nasdaq Global Market</b>

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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**Item 8.01 Other Events.**

On December 21, 2020, Wave Life Sciences Ltd. (the “Company”) disclosed that it has initiated clinical development of WVE-003 with the submission of a clinical trial application (CTA). WVE-003 is the Company’s investigational allele-selective silencing candidate targeting an undisclosed single nucleotide polymorphism on the mutant Huntingtin mRNA transcript (SNP3), which is being developed for the treatment of Huntington’s disease.

Also on December 21, 2020, the Company disclosed that it has initiated clinical development of WVE-004 with the submission of a CTA. WVE-004 is the Company’s investigational variant-selective silencing candidate targeting transcript variants containing the hexanucleotide repeat expansion (G4C2) in the C9orf72 gene, which is being developed for the treatment of amyotrophic lateral sclerosis and frontotemporal dementia.

WVE-003 and WVE-004 are the Company’s first clinical programs to utilize novel PN backbone chemistry, an advancement in rational drug design from Wave’s PRISM™ discovery and drug development platform. In preclinical experiments, judicious use of PN backbone chemistry modifications in stereopure oligonucleotides has generally increased potency, exposure and durability across the Company’s silencing, splicing and editing modalities.

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**WAVE LIFE SCIENCES LTD.**

By: /s/ Paul B. Bolno, M.D.

Paul B. Bolno, M.D.

President and Chief Executive Officer

Date: December 21, 2020